

Chapter 11 Funding/ Implementation



This chapter outlines the funding sources that can be used to meet the needs of the transportation system. The costs for the elements of the transportation system plan are outlined and compared to the potential revenue sources. Options are discussed regarding how costs of the plan and revenues can be balanced.

Transportation funding is commonly viewed as a user fee system where the users of the system pay for infrastructure through motor vehicle fees (such as gas tax and registration fees) or transit fares. However, a great share of motor vehicle user fees goes to road maintenance, operation and preservation of the system rather than construction of new system capacity. Much of what the public views as new construction is commonly funded (partially or fully) through property tax levies, traffic impact fees and fronting improvements to land development. In Washington County, the Major Streets Transportation Improvement Program (MSTIP) and traffic impact fees (TIF), similar to system development charges (SDC) are key examples.

The transportation needs typically out pace dedicated funding sources. The key to balancing needs and funding are user fees. Motor vehicle fees have become a limited source of funding new transportation system capacity due to many factors:

- Gas taxes have been applied on a fixed cents per gallon basis not a percentage basis. Increases in the gasoline tax have not kept pace with cost of transportation needs. The Department of Transportation's Bureau of Transportation Statistics data indicates that in real terms the amount of federal gas tax paid by American households has actually declined by 41 percent from 1965 (when Interstate freeway building was at its peak) to 1995. That occurred with the real dollar gas tax increasing from 4 cents to 18.4 cents in the same time frame.
- Oregon gas taxes have not increased since 1992 (currently 24 cents per gallon) and registration fees have been at \$15 per vehicle per year for over ten years. Significant new roadway construction particularly that attributed to new development, has increased Tigard's inventory of roads and maintenance during this time. Additionally, the demands of region-wide growth have increased the need for capacity improvements in the system. The most current proposal for increased gas tax (Measure 82) is before the voters in May 2000.
- Significant improvements in fuel economy over the last 15 years have reduced the relationship of user fees to actual use. For example, a passenger car with 12,000 miles of use in a year at 15 miles per gallon could generate about \$350 per year in revenue using current federal, state and county gas tax levels (about 44 cents) compared to less than \$200 per year with a 27 miles per

gallon vehicle (a 45 percent reduction). Unfortunately the same vehicle does not use less roadway capacity.

- The bill is coming due on many roads built 20 years ago in terms of maintenance. As the inventory of roads increased, the use of the roads increased faster. This is evident from national transportation statistics. The number of passenger cars and miles of urban roadways doubled from 1960 to 1995. However, the number of vehicle miles traveled on those roadways increased 470%. This increased use proportionally increases maintenance needs. Many of these roads are heavily used and the maintenance activities in the urban area have a substantial impact on operation unless work is conducted in off-peak periods, which increases the cost to maintain these roads. To compound matters, the amount of passenger car fuel consumed from 1960 to 1995 has only increased 66%, reducing the rate that revenue comes in from user fees relative to actual use.

FUNDING

Funding Sources and Opportunities

There are several potential funding sources for transportation improvements. Table 11-1 summarizes several funding options available for transportation improvements. These are sources that have been used in the past by agencies in Oregon. In most cases these funding sources when used collectively are sufficient to fund transportation improvements for local communities. Due to the complexity of today's transportation projects, it is necessary to seek several avenues of funding projects. Unique or hybrid funding of projects generally will include these funding sources combined in a new package. Examples of funding sources which generally do not provide funding for roadways include: Property Tax General Funds, Car Rental Tax, Transient Lodging Tax, Business Income Tax, Business License Tax and Communication Services Tax.

The federal gas tax is allocated through Intermodal Surface Transportation Efficiency Act (ISTEA). The United States Congress has approved reauthorization of transportation funding (TEA 21) for another six years. Federal transportation funds are primarily distributed in the Portland region by Metro (hence the term "regional funds"). ISTEA/TEA 21 funds are much more flexible than state gas tax funds, with an emphasis on multi-modal projects. ISTEA/TEA 21 funds are allocated through several programs including the National Highway System (NHS), Surface Transportation Program (STP) and Congestion Mitigation and Air Quality (CMAQ) Improvement Programs. NHS funds focus on the interstate highway system and CMAQ funds are targeted for air quality non-attainment areas.

Within the Portland region, funding for major transportation projects often is brought to a vote of the public for approval. This is usually for a large project or list of projects. Examples of this public funding includes the Major Streets Transportation Improvement Program (MSTIP) in Washington County, the Westside Light Rail Project and prior transportation bond measures in Tigard. Because of the need to gain public approval for transportation funding, it is important to develop a consensus in the community that supports needed transportation improvements. That is the value of the Transportation System Plan. In most communities where time is taken to build a consensus regarding a transportation plan, funding sources can be developed to meet the needs of the community.

**Table 11-1
Potential Transportation Revenue Sources**

Type	Description
Traffic Impact Fees (TIF) & System Development Charges (SDC)	Traffic Impact Fees or System Development Charges (SDCs) have been used in Oregon and throughout the United States. The cornerstone to development of TIF/SDCs involves two principles: 1) there must be a reasonable connection between growth generated by development and the facilities constructed to serve that growth (generally determined by level of service or connectivity); and 2) there must be a general system-wide connection between the fees collected from the development and the benefits development receives. Charges are typically developed based on a measurement of the demand that new development places on the street system and the capital costs required to meet that demand. Washington County has a traffic impact fee (TIF) which is a voter approved tax. SDCs do not require a vote of the public and are not a tax.
Gas Tax	The State, cities and counties provide their basic roadway funding through a tax placed on gasoline. State gas tax is approved legislatively while voters approve local gas taxes. State funds are dedicated to roadway construction and maintenance, with one percent allocated to pedestrian and bicycle needs. This tax does not fall under the Measure 5 limits, because it is a pay-as-you-go user tax. Washington County has a one cent gas tax and a recent ballot initiatives to increase this county tax failed.
Other Motor Vehicle Fees	The state collects truck weight mile taxes, vehicle registration fees and license fees. These funds are pooled together with the gas tax in distributing state motor vehicle fees to local agencies. Annual motor vehicle fee allocations to Washington County highways amount to about \$100 million (including gas tax). Washington County considered raising motor vehicle registration by \$15 per year in 1997 but it was not approved.
Street Utility Fees	Certain cities have used street utility fees for maintenance. The fees are typically collected monthly with water or sewer bills. These funds are not for capacity improvements, but for supporting local roadway maintenance based upon land use type and trip generation. This frees other revenue sources for capacity needs. Utility fees can be vulnerable to Measure 5 limitations, unless they include provisions for property owners to reduce or eliminate charges based on actual use.
Exactions	Frontage improvements are common examples of exaction costs passed to developers. These have been used to build much of Tigard's local street system. Developers of sites adjacent to unimproved roadway frontage are responsible for providing those roadway improvements. Developers of sites adjacent to improvements identified as TIF/SDC projects can be credited the value of their frontage work, which is included in the TIF/SDC project-list cost estimate.
Local Improvement Districts (LID)	LIDs provide a means for funding specific improvements that benefit a specific group of property owners. Assessments are placed against benefiting properties to pay for improvements. LIDs can be matched against other funds where a project has system wide benefit beyond benefiting the adjacent properties. Similarly, districts can be created for tax increment type financing. In Tigard, legal and public acceptance issues with LIDs have made them less effective and expense to administer.
Special Assessments	A variety of special assessments are available in Oregon to defray costs of sidewalks, curbs, gutters, street lighting, parking and CBD or commercial zone transportation improvements. These assessments would likely fall within the Measure 50 limitations. In Washington County, other examples of transportation assessments include MSTIP (Major Streets Transportation Improvement Program) and the urban road maintenance district property tax levy. Both of these are property tax assessments which have been imposed through votes of the public. A regional example would be the Westside LRT where the local share of funding was voter approved as an addition to property tax. Tigard is forwarding a transportation bond measure to the voters in 2000.
Driveway Fees	Gresham collects a Public Street Charge and a Driveway Approach Permit Fee. These fees are project specific and revenue varies year to year based upon development permits. These funds are used for city maintenance and operation.
Employment Taxes	Tri-Met collects a tax for transit operations in the Portland region through payroll and self employment taxes. Approximately \$120 million are collected annually in the Portland region for transit.
Oregon Special Public Works Fund	The Special Public Works Fund (SPWF) Program was created by the legislature in 1985 as an economic development element of the Oregon Lottery. The program provides grants and loan assistance to eligible municipalities. There has been limited use of these funds on urban arterials. These funds are commonly used on state highways (a recent Portland area example being Immediate Opportunity Funds used for the US 26/Shute interchange associated with Nike).

Traffic impact fees (TIF) are used to off set the cost of growth related capacity needs within the transportation system. Washington County oversees administration of the TIF program countywide, but each city assesses, collects and spends TIF funds for their own jurisdiction. The fee is updated periodically to adjust for inflation. System development charges (SDCs) are similar to TIF, except TIF require a vote of the public for implementation where SDCs do not. Both SDCs and TIFs rely upon a strong nexus between the impact of growth on the transportation system and the cost for transportation capacity improvements to serve land use growth. For example, maintenance costs or upgrading design without adding capacity are elements that would not be included in a TIF or SDC. SDC can also be placed over districts to address growth related impacts. In Wilsonville, the city has imposed an interchange SDC to provide local matching funds to ODOT for the widening of the I-5/Wilsonville Road interchange. New development pays a SDC for each trip they add to the I-5/Wilsonville Road interchange area in the PM peak hour. Table 11-2 provides a comparison of SDC/TIF rates in the Portland region.

Table 11-2
Sample TIF in the Region

Land Use ITE Code	Residential Cost per Dwelling Unit		Non-Residential Cost per 1,000 Square Feet				
	Single Family 210	Multi- Family 220	Light Indust 110	Office* 710	Medical Office 720	Retail* 820	Fast Food 834
Lake Oswego	\$ 3,592	\$ 2,573	\$ 3,820	\$ 6,383	\$ 13,221	\$ 4,002	\$ 61,052
Vancouver	\$ 989	\$ 672	\$ 313	\$ 710	\$ 1,844	Traffic StdY	\$ 4,071
Gresham	\$ 1,202	\$ 750	\$ 1,166	\$ 2,225	\$ 4,855	\$ 3,641	\$ 17,386
Troutdale	\$ 588	\$ 285	\$ 570	\$ 1,088	\$ 2,375	\$ 3,393	\$ 24,642
Wilsonville	\$ 2,256	\$ 1,573	\$ 2,547	\$ 3,700	\$ 3,700	\$ 4,755	\$ 14,265
Washougal	\$ 775	\$ 445	\$ 752	\$ 1,159	\$ 3,132		
Clark County: Mt. Vista	\$ 2,638	\$ 1,787	\$ 1,807	\$ 3,169	\$ 7,415	\$ 3,359	\$ 32,062
Clark County: Orchards	\$ 1,161	\$ 786	\$ 795	\$ 1,394	\$ 3,262	\$ 1,478	\$ 14,107
Washington County	\$ 1,790	\$ 1,181	\$ 1,199	\$ 2,034	\$ 5,604	\$ 2,998	\$ 4,500
Clackamas County	\$ 1,277	\$ 884	\$ 985	\$ 1,557	\$ 5,108	\$ 2,874	\$ 12,895
Battleground	\$ 2,869	\$ 1,988	\$ 1,955	\$ 3,169	\$ 8,489	\$ 3,894	\$ 27,226
Ridgefield	\$ 1,913	\$ 1,099	\$ 1,858	\$ 4,243	\$ 7,728	\$ 11,042	\$ 80,192
Camas (proposed)	\$ 1,416	\$ 921	\$ 1,348	\$ 2,626	\$ 4,592	\$ 2,708	\$ 21,636
West Linn	\$ 2,170	\$ 1,470	\$ -	\$ 2,961	\$ -	\$ 8,349	\$ -

Note: Assumes a 100,000 sf office and a 150,000 sf retail center.

COSTS

Cost estimates (general order of magnitude) were developed for the projects identified in the motor vehicle, bicycle and pedestrian elements. Costs estimates from the RTP or MSTIP projects in Tigard were used in this study. Other projects were estimated using general unit costs for transportation improvements, but do not reflect the unique project costs that can (on some projects due to right-of-way, environmental mitigation and/or utilities) significantly add to project cost (25 to 75 percent in some cases, due to environmental, utility or right-of-way issues). Development of more detailed project costs can be prepared in the future with project development. Since many of the projects are multi-modal, the costs were developed at a project level incorporating all modes, as appropriate. It may be desirable to break project mode elements out separately, however, in most cases, there are greater cost efficiencies of undertaking a combined, overall project. Each of these project costs will need further refinement to detail right-of-way requirements and costs associated with special design details as projects are pursued. Table 11-3 summarizes the elements of the plan that were not project specific and how costs will be addressed for these elements.

It should be noted that all costs are 2000 based. Using the Engineering News Record¹ research on historical construction costs, it can be anticipated that (based on the past ten years) construction costs will increase 2.5 percent per year. Since 1980, construction costs have increased 196 percent over 20 years.

Tables 11-4, 11-5, 11-6 and 11-7 summarize the key projects in the TSP by three key groups including:

- Bicycle Improvements
- Pedestrian Improvements
- Motor Vehicle Improvements

Many of the project costs have been developed by Washington County, Metro or ODOT for projects in the RTP. These project costs have been utilized for the purposes of this TSP.

¹ Engineering News Record, construction cost index data, enr.com.

Table 11-3
Issues With Non-Auto, Pedestrian and Bicycle Costs

Mode	Issues
Parking	The TSP does not define specific projects. Off-street parking will be provided by private property owners as land develops.
Neighborhood Traffic Management	Specific NTM projects are not defined. Traffic humps can cost \$2,000 to \$4,000 each and traffic circles can cost \$3,000 to \$8,000 each. A speed trailer can cost about \$10,000. Based upon this continuing the existing City program of about \$50,000 per year meet future needs.
Public Transportation	Tri-Met will continue to develop costs for implementing transit related improvements. The City can supplement this by incorporating transit features through development exactions and roadway project design. Developing new transit services in Tigard similar to the corridor services outlined in the TSP will require Tri-Met to reallocate funding or seek additional sources of operating funds.
Commuter Rail	Washington County is currently in the environmental phase of this project that may cost between \$60 and \$80 million. The City should work with Washington County and Yamhill County to encourage the development of a western commuter rail line to Yamhill County and points west.
Trucks/Freight	Roadway funding will address these needs. Roadway overcrossings of railroads can use special Public Utilities Commission funds set aside for safety improvements to railroad crossings.
Rail	Costs to be addressed and funded by private railroad companies and the state.
Air, Water, Pipeline	Not required by City.
Transportation Demand Management	DEQ has established regional guidelines. Private business will need to support employee trip reduction programs. In the future, the city may need to support a supplemental program that may have a cost range of \$25,000 to \$50,000 per year.

Table 11-4

Pedestrian Action Plan Project List

Rank*	Project	From	To	Cost
H	North Dakota Street	121 st Avenue	Greenburg Road	\$230,000
H	McDonald Street	ORE 99W	Hall Boulevard	\$200,000
H	Tiedeman Avenue	Walnut Street	Greenburg Road	\$350,000
H	Oak Street (RTP 6019)	Hall Boulevard	80 th Avenue	\$500,000
H	ORE 99W	McDonald Street	South City Limits	\$500,000
M	Bull Mountain Road	ORE 99W	Beef Bend Road	\$1,200,000
M	Roshak Road	Bull Mountain Road	Scholls Ferry Road	\$300,000
M	121 st Avenue	Gaarde Street	North Dakota Street	\$450,000
M	Hunziker Street	Hall Boulevard	72 nd Avenue	\$250,000
M	Washington Square Regional Center	Pedestrian Improvements (RTP 6022)		\$6,000,000
L	Taylor's Ferry Rd	Washington Drive	62 nd Avenue	\$1,000,000
L	Washington Drive	Hall Boulevard	Taylor's Ferry Road	\$200,000
			Subtotal	\$11,800,000
Sidewalks to be built with Street Improvements				
H	Bonita Road	West of 72 nd Avenue	72 nd Avenue	\$50,000
H	Walnut Street	135 th Avenue	Tiedeman Avenue	\$570,000
H	Gaarde Street	Walnut Street	ORE 99W	\$620,000
H	Hall Boulevard	Scholls Ferry Road	Pfaffle Street	\$1,000,000
H	Dartmouth Street	72nd	68th Avenue	\$120,000
H	Tigard Street	115th Street	Main Street	\$350,000
H	Burnham Street	Main Street	Hall Boulevard	\$100,000
H	Fonner Street	walnut Street	121st Avenue	\$250,000
H	Commercial Street	Main Street	Lincoln Street	\$50,000
M	72 nd Avenue	ORE 99W	Bonita Road	\$1,200,000
M	Hall Boulevard	North of Hunziker Street	South City Limits	\$670,000
M	Beef Bend Road	ORE 99W	Scholls Ferry Road	\$1,000,000
M	Barrows Road	Scholls Ferry Road (W)	Scholls Ferry Road (E)	\$950,000
L	72 nd Avenue	Carman/Upper BoonesFry.	Durham Road	\$250,000
			Subtotal	\$7,180,000
	Annual Sidewalk Program at \$50,000 per year for 20 years			\$1,000,000
			Action Plan Total	\$19,360,000

Table 11-5
Bicycle Action Plan Improvement List and Cost

RANK*	Project	From	To	Cost
H	Hunziker Street	Hall Boulevard	72 nd Avenue	\$250,000
H	Bonita Road	72 nd Avenue	West of 72 nd Ave.	\$50,000
H	Burnham Street	Main Street	Hall Boulevard	\$135,000
H	Oak Street (RTP 6019)	Hall Boulevard	90 th Avenue	\$300,000
H	98 th Avenue	Murdock Stret	Durham Road	\$275,000
H	92 nd Avenue	Durham Road	Cook Park	\$270,000
H	Tiedeman Avenue	Greenburg Road	Walnut Street	\$250,000
M	121 st Avenue	Walnut Street	Gaarde Street	\$400,000
L	Taylor's Ferry Road	Washington Drive	City Limits	\$500,000
L	Washington Drive	Hall Boulevard	Taylor's Ferry Rd	\$100,000
L	O'Mara Street	McDonald Street	Hall Boulevard	\$275,000
L	Frewing Street	ORE 99W	O'Mara Street	\$150,000
			Subtotal	\$2,955,000
H	Gaarde Street	Walnut Street	ORE 99W	\$600,000
H	Hall Boulevard	Scholls Ferry Road	Locust Street	\$500,000
H	Greenburg Road	Hall Boulevard	Cascade Avenue	\$300,000
H	ORE 99W	East City Limits	South City Limits	\$1,300,000
M	72 nd Avenue	ORE 99W	South City Limits	\$960,000
M	Hall Boulevard	Pfaffle Street	Bonita Road	\$550,000
M	Carman Drive	I-5	Durham Road	\$200,000
M	Walnut Street	ORE 99W	Barrows Road	\$1,400,000
M	Barrows Road	Scholls Ferry Road (W)	Scholls Ferry Rd. (E)	\$900,000
L	Bull Mountain Road	150 th Avenue	Beef Bend Road	\$550,000
L	Beef Bend Road	ORE 99W	Scholls FerryRd.	\$1,600,000
			Subtotal	\$8,860,000
Multi- Use Pathways				
H	Hunziker Link to LO	Linkage to Kruse Way Trail in Lake Oswego		\$500,000
M	Fanno Creek Trail	Tualatin River to City Hall, ORE 99W to Tigard		\$3,600,000
M	Tualatin River Trail	Adjacent to Cook Park from Powerlines to Fanno		\$2,600,000
M	Tualatin River Crossing	Near 108 th Avenue		\$3,000,000
L	Powerlines Corridor	From Beaverton to Tualatin River Trail		\$2,500,000
			Subtotal	\$12,200,000
		Action Plan Total		\$24,015,000

* H=High, M=Medium, L=Low Priority

Table 11-6

Future Street Improvements

(All Projects include sidewalks, bicycle lanes and transit accommodations as required)

Table 11-6			
Location	Description	Cost Estimate	Funding Status*
I-5	Widen to 4 plus auxiliary lanes (each direction) between ORE 217 and I-205	\$200,000,000	Not Funded Not in any plan
	Provide additional throughput capacity (each direction) south to Wilsonville	\$50,000,000	
ORE 217	Widen to 3 lanes plus auxiliary lanes (each direction) between US 26 and 72 nd Avenue	\$240,000,000	Not Funded In RTP (as widening or HOV or HOT) Phase 1 Funded Phase 2 & 3 in RTP RTP 6027 & 6028
	New ORE 217/I-5 interchange between 72 nd Avenue and Bangy Road	\$39,000,000	
	Phase 2 Phase 3	\$15,000,000	
ORE 99W	Widen to 7 lanes (total—both directions) between I-5 and Greenburg Road	\$25,000,000	RTP 6039
I-5 to ORE 99W	Connector linking I-5 and ORE 99W (model assumed connector would be located north of Sherwood—specific location to be determined by further study)	\$250,000,000	RTP 6005 (Toll Route)
Overcrossings over ORE 217	5 lane overcrossings linking Washington Square and Cascade Avenue—one north of Scholls Ferry Road, one south of Scholls Ferry Road to Nimbus	\$40,000,000	RTP 6011 & 6052
	Connector Road Nimbus south to Greenburg	\$15,000,000	
Overcrossing of I-5	Widen Carman Drive interchange overcrossing to six lanes from four (two through lanes each way, side by side left turn lanes).	\$4,000,000	Not Funded In no Plans
Scholls Ferry Road	Widen to 7 lanes (total—both directions) between ORE 217 and Barrows Road (East)	\$30,000,000	To 125 th – RTP 6021 West of 125 th not funded RTP 6025
	TSM/Corridor Signal Timing/ITS	\$500,000	
Greenburg Road	Widen to 4 lanes adjacent to cemetery (Hall to Locust)	\$2,500,000	RTP 6015 RTP 6014 RTP 6016 RTP 6031
	Widen to 5 lanes:		
	Locust to Shady Lane	\$2,500,000	
	Shady Lane to North Dakota	\$2,000,000	
Walnut Boulevard	Tiedeman to ORE 99W	\$4,800,000	
	Widen to 3 lanes between 135 th (or where Gaarde connects) to ORE 99W	\$11,800,000	RTP 6033 & 6034 Not Funded In no plans
	Extend Walnut east of ORE 99W to meet Ash/Scoffins and Hunziker Streets (3 lanes)	\$19,000,000	

Table 11-6			
Location	Description	Cost Estimate	Funding Status*
Gaarde Street	Extend and widen to 3 lanes Walnut to ORE 99W Use access control and 2 lanes in sensitive areas	\$4,000,000	RTP 6035
Hall Boulevard	Widen to 5 lanes Scholls Ferry to Locust Widen Hall south of Locust Extend south to Tualatin (3 lanes—total, both directions)	\$4,700,000 \$4,700,000 \$25,000,000	RTP 6013 RTP 6030 RTP 6069
Durham Road	Widen to 5 lanes (total, both directions) between Hall Boulevard and Upper Boones Ferry Road. Reserve right-of-way to the west for 5 lanes	\$8,000,000	RTP 6037
Durham Road/Upper Boones Ferry Road intersection	Realign intersection so that Durham Road continues on continuous route to I-5/Carmen interchange—Upper Boones Ferry Road would “tee” into Durham Road/Upper Boones Ferry Road intersection	\$5,000,000	RTP 6043
72 nd Avenue	Widen to 5 lanes: ORE 99W to Hunziker Hunziker to Bonita Bonita to Durham	\$3,000,000 \$5,000,000 \$5,000,000	Tigard Triangle LID RTP 6040 RTP 6041 RTP 6042
Hunziker/Hampton	Realign Hunziker Road to meet Hampton Road at 72 nd Avenue—requires overcrossing over ORE 217—removes existing 72 nd Avenue/Hunziker intersection	\$10,000,000	RTP 6032
Atlanta Street	Extend Atlanta Street west to meet 72 nd Avenue	\$2,500,000	To be funded with development in Tigard Triangle (i.e. LID)
Dartmouth Street	Widen to five lanes from ORE 99W to I-5	\$750,000	RTP 6045 To be funded by fronting improvements
68 th Avenue	Widen to 3-lanes between Dartmouth/I-5 Ramps and ORE 217 Extend 68 th Avenue south to meet ORE 217 providing right-in/right-out only access to 68 th Avenue from ORE 217, replacing the NB ramps to 72 nd at ORE 217	\$3,600,000 \$15,000,000	Not Funded (could be partially funded by development in Tigard Triangle—ie. LID) RTP 6047
Scoffins/Hunziker/Hall intersection	Realign Scoffins to meet Hunziker at Hall	\$1,000,000	Not Funded
Beef Bend Road	131 st to King Arthur – 3 lanes Access Control should be implemented to preserve capacity with 2 lanes (with intersection turn lanes). Minimum 1,000 foot spacing should be used between any driveway(s) and/or public street(s) Beef Bend/Elsner from ORE 99W to Scholls Ferry Rd	\$5,000,000 \$500,000 \$24,000,000	RTP 6059 Not Funded Implemented with adjacent development RTP 6111

Table 11-6			
Location	Description	Cost Estimate	Funding Status*
Taylor's Ferry Road	Extend to Oleson Road	\$1,900,000	RTP 6017
Wall Street	New roadway connecting Hunziker Street and Hall Boulevard	\$10,000,000	Not Funded
ORE 99W Traffic Signal System/Management	Signal interconnection from I-5 to Durham	\$2,000,000	RTP 6054 & 6055
TOTAL		\$1,091,750,000	

* - RTP cost estimates and project numbers utilized where available

Table 11-7
City of Tigard Future Intersection Improvements

Table 11-7			
No.	Intersection	Description	Cost Estimate
1	Davies/Scholls Ferry Road	<ul style="list-style-type: none"> Traffic signal Northbound right turn lane Realign to meet Barrows Road 	\$3,230,000
2	North Dakota/125 th /Scholls Ferry Road	<ul style="list-style-type: none"> Southbound right turn lane Retain westbound right turn lane when 3rd lane added on Scholls Ferry Road Change from protected left turn phasing to permitted phasing north/south 	\$450,000
3	Nimbus/Scholls Ferry Road	<ul style="list-style-type: none"> Retain eastbound right turn lane when 3rd lane added on Scholls Ferry Road Retain westbound right turn lane when 3rd lane added on Scholls Ferry Road Southbound right turn lane Reconfigure northbound and southbound lanes to create exclusive left turn lanes Change from split phasing to protected left turn phasing north/south 	\$1,150,000
4	121 st /Walnut RTP 6033	<ul style="list-style-type: none"> Traffic signal Northbound left turn lane Southbound left turn lane Eastbound left turn lane Westbound left turn lane 	\$2,150,000
5	121 st /North Dakota	<ul style="list-style-type: none"> Traffic signal 	\$150,000
6	Greenburg/Oleson/Hall	<ul style="list-style-type: none"> 2nd northbound left turn lane Extend signal cycle length Assumes Hall widened to 5 lanes 	\$550,000
7	Greenburg/Washington Square Road	<ul style="list-style-type: none"> Boulevard Treatment RTP 6015 	\$2,500,000
8	Main/Greenburg/ORE 99W	<ul style="list-style-type: none"> Southbound left turn lane Retain westbound right turn lane when ORE 99W widened to 7 lanes 	\$700,000
9	Greenburg/Tiedeman	<ul style="list-style-type: none"> Extend signal cycle length Improved geometry/alignment 	\$2,050,000
10	Hall/Oak	<ul style="list-style-type: none"> Extend signal cycle length 	

Table 11-7

No.	Intersection	Description	Cost Estimate
		<ul style="list-style-type: none"> Assumes Hall widened to 5 lanes 	\$50,000
11	Hall/ORE 99W RTP 6056	<ul style="list-style-type: none"> Southbound right turn lane Northbound left turn lane Westbound right turn overlap Retain westbound right turn lane when ORE 99W widened to 7 lanes 	\$3,700,000
12	ORE 217 NB Ramps/ORE 99W	<ul style="list-style-type: none"> Retain eastbound right turn lane when ORE 99W widened to 7 lanes Retain westbound right turn lane when ORE 99W widened to 7 lanes 2nd northbound left turn lane 	\$900,000
13	ORE 217 SB Ramps/ORE 99W	<ul style="list-style-type: none"> 2nd southbound right turn lane Retain eastbound right turn lane when ORE 99W widened to 7 lanes 	\$400,000
14	Dartmouth/ORE 99W	<ul style="list-style-type: none"> Retain eastbound right turn lane when ORE 99W widened to 7 lanes 	\$200,000
15	72 nd /ORE 99W	<ul style="list-style-type: none"> Southbound right turn lane Northbound right turn overlap Change to protected left turn phasing north/south Retain eastbound right turn lane when ORE 99W widened to 7 lanes 	\$500,000
16	68 th /ORE 99W	<ul style="list-style-type: none"> 2nd westbound left turn lane Northbound left turn lane Southbound left turn lane Change to protected left turn phasing north/south 	\$1,550,000
17	72 nd /Dartmouth	<ul style="list-style-type: none"> Traffic signal Assumes 72nd Avenue and Dartmouth widened to 5 lanes 	\$150,000
18	68 th /Atlanta/Haines	<ul style="list-style-type: none"> Traffic signal 	\$150,000
19	ORE 217 SB Ramps/72 nd	<ul style="list-style-type: none"> Assumes 72nd Avenue widened to 5 lanes 	Roadway Widening
20	72 nd /Bonita	<ul style="list-style-type: none"> 72nd Avenue widened to 5 lanes 	Roadway Widening
21	72 nd /Carmen	<ul style="list-style-type: none"> 2nd northbound right turn lane 	\$200,000
22	72 nd /Upper Boones Ferry Road	<ul style="list-style-type: none"> Assumes Durham/Upper Boones Ferry/72nd widened to 5 lanes 	\$1,000,000 (Also see Table 11-6a)
23	Hall/Sattler/Ross	<ul style="list-style-type: none"> Traffic signal Northbound left turn lane Southbound left turn lane 	\$1,150,000
24	Hall/Durham	<ul style="list-style-type: none"> 2nd southbound left turn lane Widen west of intersection to introduce 5-lane section on Durham (include existing westbound right turn lane) 	\$1,220,000
25	ORE 99W/McDonald/Gaarde	<ul style="list-style-type: none"> Westbound right turn lane 	\$700,000

Table 11-7

No.	Intersection	Description	Cost Estimate
		<ul style="list-style-type: none"> 2nd Northbound left turn lane 	
26	ORE 99W/Beef Bend	<ul style="list-style-type: none"> Southbound right turn lane (on ORE 99W) Adjust cycle length 	\$250,000
27	Tiedeman/Walnut	<ul style="list-style-type: none"> Completed 	
28	Murray/Scholls Ferry Road	<ul style="list-style-type: none"> 2nd westbound right turn lane Add additional southbound lane to achieve 2 southbound left turn lanes and two southbound through lanes Extend signal cycle length Changes to protected left turn phasing north/south and east/west 	\$800,000
29	Beef Bend/Scholls Ferry Road	<ul style="list-style-type: none"> Eastbound right turn lane Northbound left turn lane Eastbound right turn overlap Change to protected phasing east/west Change to split phasing north/south 	\$850,000
30	Walnut/ORE 99W	<ul style="list-style-type: none"> Retain westbound right turn lane when ORE 99W is widened to 7 lanes Change to protected left turn phasing on Walnut 	\$250,000
31	72 nd /Hampton/Hunziker	<ul style="list-style-type: none"> Southbound right turn lane OR eastbound right turn lane Change to protected left turn phasing all directions 	\$300,000
32	Durham/Upper Boones Ferry Road	<ul style="list-style-type: none"> Reconfigure intersection to make through route between Durham and I-5/Carmen interchange 	\$1,000,000 (Also see Table 11-6a)
33	Gaarde/Walnut	<ul style="list-style-type: none"> Traffic signal Eastbound right turn lane 	\$350,000
34	68 th /Dartmouth	<ul style="list-style-type: none"> Traffic signal 	\$150,000
35	Carman/I-5 southbound	<ul style="list-style-type: none"> Eastbound right turn lane 	\$200,000
36	Carman/I-5 northbound	<ul style="list-style-type: none"> 2nd westbound through lane 2nd northbound left turn lane Eastbound separate through and left turn (2) lanes 	\$500,000
	Safety Enhancements	Several Intersections	\$20,000,000
	Pedestrian Crossings	Several Locations	\$8,000,000
Total Intersection Improvements			\$57,450,000

* - Based upon tentative draft RTP preferred improvement list from Metro, reference numbers from November 1998 listing. Planned indicates projects included in the MSTIP, STIP, CIP or approved (1995) RTP funding programs. Not in Plans indicates projects that have not be previously addressed in one of the local or regional transportation improvement plans.

FINANCING ISSUES

The collective funding requirements of the Tigard TSP is outlined by mode in Table 11-8. Based upon current sources of funding, the cost of the needs far exceeds the existing funding projected over the next 20 years. It should be noted that elements of the bicycle and pedestrian project lists that are redundant to the street improvement list were deducted to avoid double counting. A small portion of this difference can be made up by land use development exactions, where unimproved frontage is built to the TSP standards as projects are implemented. A rough estimate of the potential value of fronting development exactions is about \$50 million dollars over 20 years, assuming that all the unimproved frontages of roadway projects (sidewalk plus 18 feet of street) identified in this plan were exactions. This would assume that the fronting improvements would **not** be credited to TIF/SDC revenue that is already included in the existing funding outlook. The magnitude of the fronting improvements is such that the City and County will need to develop private/public partnerships to assure the reasonable delivery of future improvements in a timely manner.

Table 11-8

Costs for Tigard Transportation Plan over 20 years (2000 Dollars)

Transportation Element	Approximate Cost
Street Improvement Projects* : Current Plans (RTP)	\$529,350,000
Unfunded/Not in Plans	\$619,850,000
Signal Coordination/ITS Systems (\$100,000/yr)	\$2,000,000
Road Maintenance (assumes 4% per year growth)	\$46,000,000
Bicycle Master Plan (Total \$24,015,000)	\$15,155,000
Pedestrian Action Plan (Total \$19,436,000)	\$12,480,000
Pedestrian/School Safety Program (\$10,000/yr)	\$250,000
Sidewalk Grant Program (\$50,000/yr)	\$1,000,000
Park-and-ride Expansion (1,000 spaces)	\$2,000,000
Commuter Rail (Beaverton-Wilsonville)	\$71,500,000
Neighborhood Traffic Management (\$50,000/yr)	\$1,000,000
TSP Support Documents (i.e., Design standard update, ...)	\$1,000,000
TDM Support (\$25,000/yr)	\$500,000
TWENTY YEAR TOTAL in 2000 Dollars	\$1,302,085,000

* Many of these projects include multi-modal elements built with streets, such as bike lanes and sidewalks. Project costs are included here and not repeated in bicycle and pedestrian costs. While projects in the RTP do not have committed funds, they represent a level of funding that is considered likely over the next 20 years given current funding sources.

Of this total, ten projects on I-5, ORE 217, I-5/ORE 99W connector and ORE 99W (state facilities) represent about \$900,000,000 of the total. The remaining projects in Tigard represent about \$400,000,000.

The funding sources, which can be used for various modes of transportation are summarized in Table 11-9. Historically, funding sources have been developed to support roadways for automobiles. Few funding sources have been allocated to other travel modes. Other travel modes were commonly implemented as an element of a roadway project, if funded at all. A few funding sources that the City receives for other modes include an allocation of the state motor vehicle fees which come to the City being dedicated to pedestrian/bicycle paths (about \$24,000 per year) and a small set aside of the MSTIP funds for bikeways (about \$20,000 per year). While federal gas tax funds are specifically allocated to multi-modal and balanced investments in transportation, other sources of funds such as state gas tax cannot be used for anything but highway use. To address these other modes the City will need to specifically seek funds for a balanced transportation system, while managing the overall needs and revenues.

Table 11-9
Fund Source by Project Type

Source	Bicycle	Pedestrian	Streets	Maintenance	Transit
Traffic Impact Fee (TIF)	•	•	✓		
System Development Charges (SDC)					
Gas Tax/Motor Vehicle Fees					
STATE	•	•	✓	✓	
FEDERAL	✓	✓	✓	✓	✓
Street Utility Fees				✓	
Exaction's	•	✓	✓		
Local Improvement Districts (LID)	•	•	✓		
Tax Increment Financing	✓	✓	✓		
Special Assessments		•	✓	✓	✓
Driveway Fees			✓	✓	
Payroll Employee Tax					✓
Oregon Special Public Works Fund	•	•	✓		✓

- Typically as part of roadway project where other modes are incorporated
- ✓ Used as a primary source of funding

Current transportation revenue for the City of Tigard is summarized in Table 11-10. Presuming a constant funding level for 20 years, this would potentially fund about \$250,000,000 of transportation projects (maintenance, operation, construction). As a comparison to this number, the amount of regional funding allocated to transportation projects in Tigard was calculated using the RTP constrained funding scenario. Approximately \$150 million of transportation projects have been identified in the current funding programs.² While these numbers are not exactly the same (the numbers from Table 11-10 include all City and local funding sources), they clearly point out that there is a serious shortfall between the cost of the transportation plan and the current funding sources. The transportation plan costs of \$1.3 billion are much greater than the best case revenue scenario of about \$250 million using existing funding sources. While fronting improvements and exactions have the potential to be roughly \$120 million in the best scenario, this leaves a billion dollar gap between needs and reasonably expected revenue.

Table 11-10
Estimation of Available Transportation Funding From Existing Sources
2000 Dollars (approximate)

Source	Approximate Annual Revenue
State Motor Vehicle Fees to City	\$1,500,000
County Gas Tax to City	\$100,000
TIF to City	\$1,200,000
MSTIP with City (approximate)	\$2,000,000
State/Federal Fees use in City (approximate, assuming 30% capital allocation)	\$5,000,000
ANNUAL TOTAL	\$9,800,000
20 YEAR Tigard Transportation Bond Potentail	\$50,000,000
20 YEARS OF CURRENT FUNDING	\$250,000,000

Exploring Funding Concepts

The gap between transportation plan costs and existing revenue sources creates the need to explore several other concepts. Several options are outlined below:

- A. **Reduce the transportation plan costs.** This can eliminate funding shortfalls by deferring or eliminating projects. While some cost reduction is expected in the normal implementation of transportation projects of this size, to meet the total funding shortfall by this strategy would have negative impacts. Lower service levels for all modes of transportation, more extensive congestion, and impacts on community livability would be expected. Depending how much of the plan is eliminated (assuming land use forecasts occur), this strategy could negatively impact the economic potential of Tigard (businesses relocate, people move out and development does not reach modified 2015 forecasts). Additionally, by deferring capital costs of significant projects outside of 20 years it can be expected that the same projects will cost multiples of their estimated costs in the short term. This is similar to deferring roadway maintenance and paying 4 to 5 times the cost of the same improvement by waiting years into the future to act. Rising land costs and the development of vacant land adjacent to roadways, which increases mitigation requirements (dealing with hundreds of residents rather than one

²Interim Federal Regional Transportation Plan, Metro, July 1995, Table 7-2.

landowner). Additionally changing water quality/detention needs with Salmon legislation result in higher project costs with time. These increases in cost erode transportation dollars, making deferral of transportation system improvements an unwise choice in managing the public interest.

- B. **Build alternative mode projects and eliminate costly road projects.** This strategy is commonly discussed by people as a way to “get people out of their cars”. However, the overall future need for transportation in Tigard results from the majority of people using motor vehicles (single occupant vehicles and carpool/vanpools). By not building road projects, the resulting congestion would severely impact bus transit, bicycle and pedestrian travel which all use the same streets as automobiles. The forecast increase in PM peak hour vehicle use in Tigard (about 7,000 to 15,000 additional vehicle trips in 20 years is 5 to 7 times the total existing Tri-Met bus ridership in Tigard. While transit will play a significant role in reducing motor vehicle trips, it is unlikely it could eliminate the need for the majority of roadway projects.
- C. **Increase gas tax to meet TSP needs.** The gas tax, although assumed to be the major transportation funding element is one of many sources of funds. It is primarily used to maintain the transportation system not build new local street system capacity. Presently, the state gas tax generates about \$2.5 million per year in revenue for the city and the county one cent gas tax generates about \$100,000 per year for the city. If all the motor vehicle fees of the state, county and city were increased proportionately to *by themselves* fund the Tigard transportation (less ODOT projects) shortfall, it would require an increase of over \$0.40 per gallon of gasoline in Tigard. Major increases to motor vehicle fees of this type would likely require voter approval. This amount of gas tax increase by itself would not be reasonable today, and points to the fact that funding will need to be from a variety of sources, not just one fee.
- D. **Make development pay for all the difference in future transportation needs since they are caused by growth.** If all the excess funds for Tigard improvements (less ODOT projects) were divided by the increment of trips between 1997 and the year 2015 and Tigard was responsible for the total cost of improvements it would require \$8,000 per evening peak trip would need to be charged to all development on top of all existing fees, taxes and exactions. This would double the current TIF by just adding on Tigard’s needs. An increase of this type would impact the economic development potential of Tigard since other cities (or states) may not have similar charges. Additionally, many of the transportation projects identified in the TSP serve **existing and** future users. For example, a roadway connection project with sidewalks and bicycle lanes (such as Walnut Street) is beneficial to all system users. This approach would unfairly impose the entire responsibility of TSP implementation on development. Additionally, some improvements are needed even if no growth were to occur, creating a need to fund at least some transportation improvements by other means.
- E. **Do not allow land development unless all transportation needs can be funded.** This concept is known as concurrency. This has been implemented in various forms through level of service code amendments required by state laws (Florida and Washington). The examples over the last 15 years of these policies is clear. Funding policy redirects itself to fix capacity problems. Transit, pedestrian, bicycle and other mode facilities are generally not based on capacity but connectivity and access. The outcome in these communities is always larger

roads - from Clark County, Washington to Contra Costa County, California to Boward County, Florida. A balanced transportation system is difficult to develop under concurrency assumptions. Outright development moratoria based upon transportation are difficult to impose given Oregon Planning and property rights laws. Creating extraordinary requirements for development would impact economic vitality and likely move the problem rather than fix it. ODOT has taken positions recently that have opposed rezoning of land if state facilities do not have adequate capacity and funding is not programmed. This is similar to concurrency. It blends assumptions that Comprehensive Plan land uses could be adequately served and that all new/additional vehicle trips are bad for the transportation system. Again, the linkage of concurrency in any form, no matter how simple or appealing, does not produce the most effective or efficient transportation system. This approach defers improvements increasing their eventual cost of implementation. It is a reactive policy, not a progressive plan to reduce overall transportation system costs.

- F. **Use bonds to fund transportation needs.** Bonds are commonly used for financing transportation projects (the Westside LRT project property tax levy uses tax receipts to fund bond payments to fund the project). The use of public bonds would require a vote of the public. This type of program would include a list of transportation projects that would be funded and a general time frame for completion. Based upon an estimate of property value in Tigard, the funding gap would require an increase in property tax approximately \$500 per year over 20 years for a homeowner of a \$200,000 home. If all the transportation improvement in the Tigard area were pass on via bonds to Tigard property owners it would represent over \$2,000 per year to a \$200,000 home. Because increases to property tax are not generally viewed positively by the public, an extensive public involvement effort would be necessary to coordinate the understanding of need, the extent that the bonds should fund transportation needs and what the actual program elements would include.

In studying various strategies, it is clear a “one size fits all” plan will not succeed. It is recommended that a diversified and pragmatic strategy be developed that reflects political realities, economic needs, community livability and a balanced transportation system. Since transportation funding is not controlled locally, it will require steps to be taken at the state, regional, county and city level to be effective and fair. The following steps are necessary to implement the Tigard TSP.

- Prioritize all transportation projects in Tigard so that the Regional Transportation Plan includes the projects of greatest need. The other projects should be included in preferred and strategic project lists to be eligible to compete for future regional funding. Additionally, as conditions change in the future the need for certain projects may change.
- Use the priority listing to create City of Tigard transportation bond measures – this would have the potential to fund \$50 to \$100 million over 20 years. The current bond measure would be part of this implementation step.
- Start with funding the highest priority TSP needs on the anticipation that over the next 20 years, new and complementary funding programs will be developed. This is more pragmatic than presuming all projects must have funding commitments today and accommodates changing needs and priorities over time. It is important not to stop everything today until a plan to fully fund all the transportation needs approved. Over time policies and programs in the plan which are intended to reduce vehicle demand can mature and new technologies that improve transportation

efficiency can evolve that may change how much or when funding becomes needed.

- Given the relative size of a gas tax increase to fund transportation improvements in Tigard, a more diverse source of state and regional funding will be needed. Assuming that funding shortfalls can best be paid by gas tax statewide ignores the fact that the rest of the state may not share Tigard's or the Portland region's need to fund transportation. Three steps can be taken including:

Statewide: Support gradual and incremental increases to the state gas tax are made (about \$0.06 to \$0.10 per gallon each six to eight years (assumes three increases in 20 years). Support statewide collection and proportional increases to truck fees (presently weight-mile tax and diesel tax in other states).

Regionally: Support increases to motor vehicle registration and air quality surcharges (payable every two years at DEQ inspection or upon sale of vehicle based upon actual miles driven). These relate the urban needs and problems. However, if air quality improves the nexus of higher fees may be difficult.

County: Update the TIF to better reflect arterial and collector needs in the county. Credits and fronting improvements will need to be reevaluated, particularly with more and more potential for redevelopment. It can almost be assured that TIF's would need to be increased given the county wide transportation needs. In addition, a program similar to the MSTIP where a property tax levy is used to fund the most significant projects in Tigard (or regionally, as in Washington County) could be done over the next 20 years, potentially funding up to a quarter to a half of the funding shortfall. Additionally, county gas tax and vehicle registration fees could be increased or created.

- Maximize the use of funding sources from smaller pedestrian and bicycle projects. Over a twenty year period the following funding sources could generate a few million dollars which is significant for those modes of travel:
 1. Obtain planning assistance money from the Transportation/Growth Management Program. This could include project grants or planning assistance through "Quick Response" teams. The TGM program is administered by ODOT/DLCD.
 2. ODOT's Bicycle and Pedestrian Program administers two grant programs to assist in the development of walking and bicycling options. Local grants up to \$100,000 are shared 80% state/20% local can be useful in filling gaps.
 3. The Oregon Livability Initiative could be a source of funds for further commuter rail planning to Yamhill County.
 4. TEA-21 Congestion Mitigation Air Quality Improvement Program is a source of funds administered by Metro that provides a regional source of money for smaller pedestrian/bicycle projects.
- At a city level, consider needed city code/charter changes to allow broad use of local improvement districts, area SDC's and bond measures to fund elements of the transportation plan. One of the toughest problems for development of concurrency are initial costs for street improvements. Tax increment financing commonly used for redevelopment has nearly been discontinued by public agencies due to tax reduction measures. Tax increment refers to selling bonds to pay for infrastructure that are paid off by the net income of increased tax revenues

created by increased property value. Tax increment financing can be very effective in district level master plans or redevelopment.

- Another bonding concept requiring legislative change, would be to bond sidewalk/fronting improvements in already-developed areas with net proceeds tied to the title on the land such that upon transfer or resale the city is paid back, including interest. Current property owners would benefit from the improvements and could pay off the assessment earlier at their discretion. The city would need to front and back the bonds and if over the bond life resale/transfer does not occur the city would be responsible. Given that the great majority of homes change ownership over 20 years the risks should be minimal. This concept requires further study and legislative review before testing the application.
- Using the development review process to protect the needed right-of-way in the next twenty years to meet transportation system demands is another possible tool. This can reduce the ultimate cost of street improvements. This requires an analysis process (build out assessment or frequent updates) to stay current of future right-of-way needs based upon changing land use (for example, three lanes in 2015 may need to be 5 lanes in 2025). Also known as a corridor set back strategy, this approach helps preserve long term right-of-way needs.
- Develop funding programs (using new motor vehicle fees or other funding sources) to encourage private/public cooperation in funding transportation improvements. This may take several forms and will require more assessment. One example would be establishing a city funding source that can be matched with private funding sources to implement elements of the TSP.
- Roadway pricing strategies may become necessary for the large deficit in ODOT projects in not only the Tigard area, but the Portland region. While tolls would not represent the full deficit, they would (like all the above measures) contribute to funding the needed transportation system. Any road pricing strategy would not be predicated upon past “toll booth” approaches, but would be built on new technology that would not require people to stop and pay (automatic vehicle identification and debiting).